BASIC COMPUTER MAINTENANCE

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EXAMPLES OF EDUCATIONAL TECHNOLOGY DEVICES

The following are five examples of educational devices likely to be found in a school setting:

1. Personal Computer – Teacher. A personal computer provides a resource for the teacher to develop and communicate information with students involving different media and formats. This includes instructional materials via presentation software, instructional videos, and interactive internet websites which can be used for student presentation or interaction depending on the capabilities. The personal computer also serves as a device for the teacher to interact with other on-line systems.
2. Student electronic notebook such as Chromebook. The notebook is an electronic communication tool which provides the student the opportunity to access instructional materials on classroom sites such as Moodle. It is also serves as a communication tool to use electronic mail systems, access on-line grading systems and certain allowed internet resources involved with instruction.
3. Peripheral Devices – printer. Printers provide for supplication of hardcopy resources for functions such as testing, quizzes and homework.
4. Application software - PowerPoint®. This is a primary format for providing clear communication of instructional content to students. Key presentation points with attractive formats allow for communication and discussion supporting key learning objectives.

1. Application software – student on-line gradebook reporting. These on-line software tools provide for interactive real time updates of detailed and summary student results by teachers for common access by students and care givers. This is a key tool to provide prompt feedback on student performance to avoid surprises and corrective actions by parents and students.

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Procedures for Maintenance and Security

1. The following is a stepwise procedure for providing basic maintenance protection (Peijun, 2002):
2. The computer should be inspected frequently for removal of any dust, dirt or residue on connections and vents used for discharging heat. Computers are sensitive to heat and the ability to maintain maximum heat discharge capacity is important to provide reliable performance. Air dusters can be purchased which are small pressurized cans of air which when activate deliver short bursts of purified air to displace or remove dusts from accumulating.
3. Maintain hard disk organization by running specific software, SCANDISK, once per month. This prevents information corruption caused by any physical damage to the hard disk from impacting system performance. This can be accessed through programs, accessories, system tools, and SCANDISK.
4. Specific hard disk maintenance to prevent fragmentation can be achieved by also running specific software through program utility tools as well. Disk Defragmenter program can be accessed through programs, accessories, system tools and then running disk defragmenter.
5. A specific anti-virus software package such as McAfee should be run monthly as a general practice to prevent any harmful effects from viruses. This software may be purchased and installed on most personal computers.
6. The value of maintenance and security. Teachers depend on reliability of computers and their information systems as a key tool and focal point for the continuity of their instruction. Even if back-up or spare hardware is available, unless the information content is available and accessible there will be a major disruption to the classroom instruction. There are several specific value considerations to consider:

* Meeting classroom schedules for achieving learning objectives. Timing is constrained and instructional timelines are tight so any significant disruption can threatened achieving the overall objectives from being achieved.
* Unplanned disruption of resources to recover, troubleshoot and correct any deviations. Educational resources are also constrained and proactive planning to prevent unplanned events requiring resources to correct and prevent unnecessary resources on a reactive basis.
* Credibility impacts reflect poorly on teachers as leaders not capable with computer maintenance and security best practices. Teachers are viewed as leaders and avoiding

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These kind of experiences avoid perceptions by students that maintenance and security practices are not important or routinely practices by leaders.

Consistent practice of known preventive maintenance and security procedures by teachers provide significant value to the classroom by avoiding these disruptions and proving examples to students that responsibility for these computer practices can result in effective and efficient classroom instruction.

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Virus Awareness

What is a virus?

A computer virus is a foreign computer program that functions by inserting itself into other [computer programs](https://en.wikipedia.org/wiki/Computer_programs) or data files and replicating copies of itself. Viruses often perform some type of harmful activity with infected host computer. These can include disrupting operations of the host computer, stealing information from the host computer or continuing to duplicating itself for distribution into other computers. (Aycock, 2006).

How do you identify a virus?

There are several aspects of computer performance to be aware of to identify a virus:

* Monitor computer performance and operation in general. If you observe the computer hard drive running during periods when you are not running programs this could be evidence of a virus.
* Slow start-up of computer during the boot-up period may be an indication of virus contamination.
* Specific software performance problems could be an indicator of a virus. If a program is crashing during execution or running very slowly this could be the result of a virus.
* Unusual pop-ups unrelated to software programs running at the time could be evidence of a virus.
* Problems with document integrity or missing documents are a potential indicator of the presence of a virus.

What are the possible sources of viruses?

Potentially there some known sources of viruses one should be aware of:

* Clicking on unidentified pop-ups or unsolicited inquiries which come up on your screen.
* Opening files from strangers or unknown sources which you are not familiar with.
* Opening mail from unknown senders or originators. If your email reader supports applications it may be possible just by opening the email you also are opening attachments which could be involved with viruses.

By being aware of what you are doing and using discipline in what files you are opening intentionally one should be able to monitor and control for potential sources of viruses.

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Virus Awareness

How do you prevent viruses?

The primary strategy for preventing viruses is to follow the practices above about disciplined computer behavior combined with consistently running anti-virus software. Viruses are constantly being developed and evolving so it is necessary to have a continuous approach to having an effective anti-virus software and running it consistently.

References

Aycock, J. (2006) *Computer Viruses and Malware*. Springer. p. 14.

Peijun, J. (2002) Computer troubleshooting tips for librarians. *Reference Librarian*, 37 (77)

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